

ganisms. Finally the demonstration of the success of quarantine of all patients until accurate diagnoses are made and the distribution of such patients in wards where like infections are only present has been shown to discourage the spread of such diseases.

As a preventive for pneumonia definite evidence, such as that of Fennel in an excellent recent article, begins to show the success of pneumococcic lipo vaccines in the prevention of pneumonia of all types included in the vaccine. Rosenow moreover is of the same opinion. Camac prophesies good prophylactic results in the use of carefully prepared polyvalent streptococcal vaccines. The failure of former attempts in prophylaxis has probably been due to the non-inclusion of the proper strains of pneumococci and streptococci in the vaccine which has been administered.

In conclusion I wish to lay emphasis on the following facts.

1. Pneumonia of unusual severity and varying mortality has been most prevalent during the last year, especially in the Army camps.
2. The diagnosis of these pneumonias, especially of the lobar type, has been greatly facilitated by the use of the X-Ray.
3. The treatment of these pneumonias with large doses of digitalis and in suitable cases with serum has undoubtedly reduced the mortality.
4. Empyemas developing early in pneumonias due to the streptococcus have been found especially fatal unless repeatedly aspirated until the pus became thick and creamy, when surgical intervention, preferably by a closed method, might be resorted to safely.
5. Many new ideas for successful prophylaxis have been worked out including the use of pneumococcic and possibly streptococcic vaccines.

Thomson Building.

(Note: This communication is a digest of some one hundred articles which have appeared in the medical literature of the past year. A few of the most important references are given.)

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### CYSTITIS AS A DIAGNOSTIC FALLACY.\*

By GEORGE G. REINLE, M. D., and E. SPENCE DE PUY, M. D., Oakland.

*Nephritis, Cystitis.* Of all the recognizable disease pictures of the urinary system these two as diagnoses rank highest in degree of popularity. So almost exclusively are these terms used that one might question whether other urological conditions are sufficiently well kept in mind, and whether in truth the terms cystitis and nephritis have a definite meaning in the minds of their users. More frequently than should be, are disturbances of the urinary system lacking in definite recognition. It is only within quite recent times, however, that urinary diseases have been studied in terms of living subject; heretofore they have been classified in accordance with the findings of the mortuary room, and effort made to fit the symptoms of the living to the findings of the dead.

Urine reports are closely scanned, but are all of the findings given due consideration? The diagnoses reached from the urinary reports are commonly far from ideal. As frequently interpreted, if there are casts, irrespective of reported white blood cells, the case automatically becomes one of nephritis, the type, depending upon the specific gravity and urine output or, if there is pus, and no casts, the case is not uncommonly concluded to be one of cystitis. In all probability neither of these diagnoses is correct, but in regard to the latter we wish particularly to call attention.

That the number of diagnoses of cystitis is too common and is not particularly creditable; a multitude of diagnostic sins hide behind it. Cystitis as a diagnosis is applied to pathological conditions ranging in location from the meatus urinarius to the cortex of the kidney. This is unfortunate when the grave consequences are considered, for while actually priceless time is being whiled away in the consumption of demulcents, the ingestion of urinary antiseptics, the injection of vaccines, and irrigations of the bladder, one and often both kidneys are frequently undergoing degeneration beyond repair.

Cystitis as a diagnosis will not do. We must realize that the term, as indicative of a disease, is of but limited significance. This is a conclusion fully concurred in by all urologists. A diagnosis of cystitis at the best can be but 4 per cent, which leaves small margin of comfort. Cystitis is no more a disease than is "dropsy" or "inflammation of the bowels."

Calk has this to say: "Cystitis as a disease is extremely rare, it is usually representative of some co-existing infection either in the upper urinary

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tract or in the genitals. This diagnosis, frequently based upon the symptoms: frequency, pain and pus in the urine, is entirely insufficient, and this superficial diagnoses is responsible for many of the destructive kidney lesions." And, he adds: "The profession must realize that if such symptoms do not promptly abate under the standard treatment for cystitis within a week or ten days, the cystitis is complicated by some other disease particularly infections of the kidney."

Another authority asserts: "It is important not to be deluded into being satisfied with dismissing a patient with the diagnosis of cystitis. The symptoms call for a complete investigation of the kidneys, prostate, seminal vesicles and urethra, as well as the bladder itself." Keys says: "The diagnosis of cystitis means nothing. Inflammation of the bladder is ALWAYS caused by something else. That 'something else' is usually infection of the kidney."

Undoubtedly there may be a cystitis in a cystocele, for example, for here we have the ideal conditions of stale urine, decomposition, and irritation of the mucosa by an alkaline urine, and the close proximity of this culture medium to a source of infection the genitals and the lower bowel. But even here the diagnosis can not properly be a cystitis, for we have back of it a bladder defect.

We have cystitis following other causes of urinary retention of course, but as they are classifiable as urinary diseases our cystitis again becomes merely a symptom, not a disease. Nor is it of any particular moment what the infecting organism may be, whether it be colon bacillus, staphylococcus or an organism causing incrustation.

The two great factors in cystitis are retained urine, plus invading organisms. The organism may make its way from the urethra, it may descend with the urine from the kidneys, it may pass from the blood stream direct to the bladder, or it may pass through the lymphatics from adjacent organs.

Retained urine, incomplete emptying, result from obstructions of the urethra, which may be occasioned by phimosis, small meatus, stricture, calculus of the urethra, and new growths in urethra.

At first thought this might seem merely a technical enumeration of causes that would not be overlooked in cystitis. But, considering them in their order, we recall a case of phimosis complaining of frequent and painful urination. The patient was an adult of 37. There was a history of "bladder trouble" from as far back as could be recalled. Physicians had been consulted at various times, and the urine had been examined, but the genitals had apparently never been subjected to inspection. There was a long prepuce, almost fibrous in consistence, which was traversed by a narrow channel, through which it required an expulsive effort to force the urine. A circumcision was done and with a few instillations into the bladder the long standing symptoms disappeared. A complete urological examination revealed no other pathology. The case is simple, the point is obvious, but the patient in the meantime suffered for years.

A pin-hole meatus would cause the same result, but would not, of course, be discovered unless the prepuce were retracted and the meatus inspected.

The following case of calculus of the urethra indicates again the necessity for care in little things. A woman was seen suffering acute distress through inability to void her urine. The bladder was immensely distended, the urethra was intensely hyperemic and patulous. Palpation through the vagina revealed a hard foreign body in the urethra, and an attempt to pass a metal catheter established the diagnosis of calculus of the urethra. So large was the stone it formed almost a complete urethral cast. Upon removal of the obstruction and cystoscopy, the bladder was found to harbor no other calculi. The particularly interesting part of this case is the history. The patient had had "bladder trouble" for eleven years. During that time she had suffered continuously from diurnal frequency, though she had only slight night disturbances, rising usually only twice during the night. The patient "worked out" by the day, and her circumstances were not good, but for all of that she had consulted five different physicians. A sample of urine was requested by each, two of them actually sent the urine to a laboratory, and reported that there was considerable pus. The patient was informed that she had "inflammation of the bladder," though one attendant thought there might be some trouble with the kidneys. Eleven years, five physicians, certainly two examinations of the urine, but not one examination of the patient, and a mere attempt to pass a catheter would have cleared up the diagnosis.

*New Growths of the Urethra.* Papillomata do occur in the male urethra, and with greater frequency than might be supposed, particularly at the margin of the sphincter, but they are less common than caruncle of the female urethra. An interesting case in point was recently seen through the courtesy of Dr. Jo Hamilton. A woman 67 years of age, upon whom he had operated for caruncle, was suffering from an intense purulent cystitis. As in many such cases the history taught a great deal. She had suffered well-nigh unbearable distress for nearly twenty-five years. For several years past she had intermittently practised self-catheterization which, difficult enough for the male to perform aseptically, is out of the question for the female. There followed a staphylococcic infection. Upon examination the catheter brought away at first almost pure pus, and the bladder was only cleansed after repeated washings, and would not hold enough for cystoscopic examination unless under an anesthetic, nor would the patient tolerate the manipulation of a close-vision instrument, requiring less than one ounce of water. Although this patient had suffered all these years, her caruncle was only recently discovered and removed, and her self-inflicted catheter infection has resulted in a very pitiable condition.

cystitis but of kidney infections as well. Urethral stricture, because of its principal symptom, when occurring in the male, is not commonly

overlooked. In the female, however, urethral obstruction is not so commonly suspected. In this connection Osgood has this to say:

In the female the urethra is often disregarded. Every complaint of painful urination should focus the attention of the investigator upon the urethra as the seat of the origin of this symptom. Abnormally frequent urination points to a disturbance of the sensory nerves in the grasp of the internal sphincter. Among the important causes of stricture of the female urethra he considers the trauma due to parturition to be one well kept in mind. Luys as well as Osgood considers that the female urethra should be much more frequently investigated through the urethroscope, and in this connection there is no question but what with the newer, water-dilating urethral instruments much better and more enlightening pictures are to be observed.

According to the same observer, the subjective symptoms of stricture of the female urethra may not make themselves manifest for a long period; they may develop gradually, and it may be months or years before the patient calls attention to her condition. Bladder infection is an inevitable late result, this frequently complicated by hypertrophy of the detrusor and trabeculation.

Inflammation as well as stricture are a not uncommon condition in the female, and frequently are diagnosed as cystitis. Only an instrumental examination will establish the differential diagnosis. It may be observed in passing that urethroscopy is a more difficult procedure than cystoscopy, and that it demands patience, skill and experience.

Next in order of incomplete bladder emptying as the result of obstructions, we have: displacements, prolapse and cystocele, which we must satisfy ourselves with merely mentioning. Also to be borne in mind are extravescical tumors, adhesions, and obstructions of the bladder neck. The latter is of the utmost importance, for the dual reason that it is so common, and so frequently overlooked. Under this class of obstructions come prostatic hypertrophy, prostatic carcinoma, prostatic atrophy. The cystitis due to these causes is not in the main acute, and may be accompanied by retention varying in quantity from a few to several hundred cc.

Prostatic hypertrophy, even when the gland is of enormous size, is commonly undetected, for the reason that it does not come under touch of some inquisitive finger. Nor is digital examination alone always sufficient, even when the gland is large, for it may be that the main portion of the growth is intravesical. On the whole, however, among men who really examine their patients the very large prostate is generally discovered. It is the only moderately large prostate that one has to keep continuously in mind. An individual with such an obstruction and a residual urine of 20 cc., may suddenly develop an exceedingly stubborn cystitis. The prostate may not be very large, and yet may obstruct the urinary flow. Only an instrumental examination will reveal the true condition. It is upon this type of prostate the surgeon hesitates about performing a radical operation; something

however must be done, and it is here endoscopic methods of attack are to be preferred.

Prostatic carcinoma, in considering cystitis, may be dismissed with consideration of prostatic hypertrophy, from which it will not be differentiated except by the exercise of special skill.

In addition to the obstructive causes of incomplete emptying there are the spinal lesions. Not uncommonly it is the urologist who discovers the first evidences of tabes. Just as truly as the eye-ground mirrors a nephritis, so the trabeculated bladder may reflect the spinal lesion. Were routine cystoscopies done in all cases of cystitis, the tabes cases thus early detected would at least have a better chance of recovery through intensive spinal therapy administered at a time when the prospects of cure are better than when the symptoms have become more obvious.

As a quite different cause of incomplete emptying, diverticulum of the bladder is to be thought of. It is not a rare condition. The symptoms are frequent urination, pain, pus in the urine,—cystitis. Only the cystoscope will reveal the condition.

These, then, the various causes of incomplete bladder emptying and comprising a considerable number of well-defined conditions, are among the few that are daily treated for cystitis. But this is only one group. Another important group are the chronic irritants.

Foreign bodies.

Calculus.

Neoplasms.

Foreign bodies in the bladder generally bring with them their history of how the "accident" occurred, and consequently furnish their own diagnosis.

Calculi are not always diagnosed. One case is recalled that was treated several months by bladder irrigations. This patient was later operated upon by another attendant with the natural result of relief and cure.

Neoplasms of the bladder, when of long standing, give rise to a particularly intolerable cystitis, once they become infected. The diagnosis of vesical tumor is to be made either through cystoscopic examination, or, if of sufficient size, may be demonstrated by a cystogram, taken with a shadow-casting fluid in the bladder. A case of multiple papilloma came under observation a year and a half ago. This patient was suffering from frequency and pain of so severe a character that she was confined to the house entirely. The growth so completely filled a contracted bladder that cystoscopy with a water medium was out of the question, as not more than 30 cc. of fluid could be introduced. The ordinary observation cystoscope plunged immediately into a mass that darkened the instrument so that observation was impossible. Had a close-vision cystoscope with a continuous flow of water been available a view could of course been had. The mass was palpable through the vagina however and a diagnosis arrived at. The patient was operated by a supra-pubic cystomy, two sessile and one pediculated growth were removed. The history of this case shows that for a number of years this

patient had suffered and been treated by a number of physicians for cystitis. Up to the time this patient was first seen and for a number of weeks previously, the patient had been receiving semi-weekly bladder irrigations, and this in the face of the fact that less than 50 cc. fluid could be introduced. To complete the history, about three months following operation the patient returned with a recurrence of the frequency. The bladder at this time held a 150 cc. of fluid. Cystoscopy disclosed the scars of operation and as well a dozen or more new growths, all of small size, these probably the result of implantation at the time of operation. These growths were fulgurated at intervals of a week. After ten treatments the mucous membrane appeared free of growth in all but one place which had an appearance of malignancy. The patient was quite comfortable however and, although advised to return at intervals for observation, has not been seen for eight months. This is the most interesting case of "cystitis" we have encountered.

Another case of papilloma had three well-defined growths, with frequent urination and tenesmus. Fulguration was followed by relief upon first treatment and complete disappearance after five treatments. The bladder was normal when examined three months later.

So far as life itself is concerned we have thus far not considered the more important causes of cystitis, we now come to the vital factor. If there is pus in the urine it is important to know where it comes from and how dangerous it is.

The sources of pus are:

Fistulae.

Pelvic abscess.

Infections from the lower genito-urinary tract.

Infections of the kidney.

Posterior urethritis, during its onset, almost invariably has as its beginning frequency of urination accompanied invariably by pain. As in all acute cases urethral discharge has so recently advertised the source of the infection, there is small danger of the real condition being mistaken. In chronic posterior urethritis accompanied by vesical symptoms it is a different story. The diagnosis of the precise pathology of the posterior urethra requires special skill, but in order to effect a cure or even relief it is essential that the seat of the trouble and its character should be ascertained. Some of these patients, irrigated for a long time, become utterly discouraged. Although not a menace to life, posterior urethritis is frequently a serious burden to the patient's comfort, and almost invariably a violent disturber of his mental and nervous system. Posterior urethritis is not ordinarily to be cured by the mere passing of a sound, either once or many times, and it should serve better to place general respect for medicine upon a higher plane if this condition were not so frequently treated with little or no regard for refined diagnosis, upon which alone a rational therapy can be based.

Above and beyond all others the most important cause of cystitis is infection of the kidney. It can not be too frequently nor too forcibly repeated that every case of cystitis must at least be suspected of

having as its underlying cause an infected kidney, and this suspicion must not be abated until the contrary is proven. If it could be accepted that every case of cystitis must be proved NOT to be of renal origin, if every man could have it brought home to him that he has done but an exceedingly small part of his duty until he has EXCLUDED the kidneys beyond all doubt in every case of cystitis, humanity would be the gainer, and scientific medicine would be advanced.

There is no question but that the seriousness of kidney infections is not sufficiently well understood by the profession at large, and by this it is not meant by men of mediocre attainments only, but men really good in all other branches of medicine, —both surgeons and physicians.

The classifiable conditions about which there is no question, are:

Tuberculous kidney.

Pyelitis.

Pyonephritis.

Pyonephrosis.

Renal calculus with infection.

So important are these subjects that it can not be amiss to state again the well-accepted facts.

Tuberculous kidney, of which it is important to make a diagnosis at the earliest possible time, while surgical means may yet avail, is in a large proportion of cases proclaimed by violent bladder symptoms. These bladder symptoms are, in fact, often the only indications of the disease. "It may be laid down as a safe rule," says Morton, "to suspect tuberculous kidney in *every case* of cystitis in young persons which is not due to stone or stricture and does not get well under bladder washings with solutions of nitrate of silver." To this it might be added that if nitrate of silver solutions aggravate the condition the diagnosis is half made.

Not to enter into the diagnosis, each frequently being the logical successor of the other, is it possible for us to bring home to ourselves too strongly that every kidney disease is not Bright's disease; is it possible for us too strongly to emphasize the fact that pus in the urine probably comes not from the bladder only but very likely has its source in the kidneys; is it possible at all to too strongly urge the fact that the infected kidney goes on from bad to worse!

It might seem that we dwell too long upon the obvious, that these elementary urological truths need no emphasis, but that they do need emphasis we know from daily experience, and we can not too strongly proclaim, even at the risk of censure for our insistence, that there must be a continual, an unceasing watchfulness for kidney infections. If one is not alert a pyelitis will almost while you watch it become worse, and this again turn into something hopeless. There is so little in the way of therapy that can be done for the diseased kidney that it is of first importance that this little be done at the right time.

In a recent report Harry Culver instances 90 cases with proved pyonephritis entering Cook County Hospital in 1917 with not a single diagnosis of the condition, though ten were sufficiently

near to be serviceable to the patient,—that is, pyelitis. Cystitis was the admitting diagnosis range over 19 other diseases, such as appendicitis, cholelithiasis and so forth. This series of cases is reported from a city where the average of ability runs as high as it does anywhere in the country, yet one-ninth of the diagnoses were even approximately correct. The result is not so much one criticism, as for realization that in various affairs we must be dependent upon each other for extra special knowledge, and highly technical skill, if we are to achieve the kind of results properly to be expected of us.

In conclusion we desire to instance a case of renal calculus recently reported in the Journal of the A. M. A. The patient, with pus and blood in the urine, was treated for cystitis and her attendant referred her to a colleague who reports the case. "She was referred to me for diagnosis," says the latter. But instead of having the bladder looked into, or the ureters investigated, to find where the pus and blood came from, or even having a *Roentgram* taken, the consultant apparently made no more intelligent an effort than his predecessors, for he reports trying Argyrol and permanganate irrigations for a considerable time. And then, quite by accident, as it were, "to locate the source of the infection," a *radiogram* was taken and an "enormous calculus discovered and the diagnosis thereby established." But even the diagnosis, with clear indications for surgery did the patient little good, for vaccines were futile because of an incidental purpura hemorrhagica that had developed while the patient was under observation. Only eventually was operation resorted to, with a relief of the intercurrent symptoms, as well as the troublesome bladder for which the patient had sought relief.

Cystitis! Yes, there is such a thing, but it is a diagnostic fallacy, the refuge either of the man who is careless or indifferent.

### COMPLETE INVERSION OF THE UTERUS.

By WILLIAM MONROE LEWIS, M. D., Los Angeles.

Mrs. O. A. T., Wt. 130, Age 26, personal history negative, second labor; pregnancy normal in every respect; labor normal and rapid.

While the first labor two years before had been difficult, requiring forceps to complete the delivery, this child was born without any difficulty, the umbilical cord of normal length. The patient was in the dorsal position when the child was born.

The third stage was slow, but not attended by hemorrhage. As the uterus was gathered up in the left hand it was felt to give way and leave the hand. At the same time the placenta protruded from the vagina followed by a large red smooth shining body (the inverted uterus).

There was no hemorrhage. The patient had been given chloroform as labor progressed to ease the pains and when the child was delivered she was completely under its influence. Muscular relaxation seemed complete. Not an instant was lost before efforts were made to restore the organ to its place. In grasping the uterus, which was completely in the world in full view, it felt firmly embedded and as I moved it from side to side there was no give on either side.

I made a cone of my fingers and pressed over the inverted fundus for a point that would give and much to my satisfaction this spot was found before many seconds and the organ returned to

its place enveloping my hand. Crede massage promptly restored a firm uterus and the hand was withdrawn with not enough blood to call a hemorrhage. Robust health but no future pregnancies.

The second case occurred in the practice of Dr. J. A. LeDoux, in 1916. It had been a slow tedious labor in a young woman 22 years old, weighing about 120 pounds. This was her first pregnancy and the months of gestation had passed without incident. When dilation was complete forceps were applied and a living child delivered without difficulty, the placenta following promptly without hemorrhage. In a very few minutes the patient recovered consciousness from the ether and at once complained of pain in uterus. Inspection revealed no hemorrhage and nothing protruding. At this moment I was called in consultation. On examination per vagina the vaginal space was occupied by a large smooth shining body very firm, which could be seen on separating the labii; and the hand placed over the pubic brim of the pelvis felt nothing like a uterus. An anesthetic was administered and the uterus restored as in the first case by making a cone of the fingers and feeling about till a soft spot was found, then the uterus was quickly reduced. When the hand was withdrawn from the uterus contraction was prompt without hemorrhage. The patient rapidly recovered from the shock.

The woman has borne one child since without any difficulty.

Both of these cases were spontaneous complete inversions of the uterus as no effort was made to expel placenta or sit up in bed, both being under the influence of an anesthetic. Both cords were of normal length and traction was not made on cord. The second case suffered from profound shock; her condition could not be recognized promptly, as was the first.

## Book Reviews

**General Medicine.** Vol. 1 of the Practical Medicine Series 1919, edited by Frank Billings. 622 pages. Chicago: Year Book Publishers. 1919. Price \$2.50.

**Contents:** Infectious Diseases. Diseases of the chest: bronchi, lungs and pleura, heart and blood vessels. Diseases of the blood and blood-making organs. Diseases of the ductless glands. Disorders of development. Diseases of metabolism. Miscellaneous diseases. Diseases of the kidneys; gastro-intestinal tract. Diseases of the liver and gall-bladder.

**Laboratory Methods of the United States Army.** Medical War Manual No. 6. Compiled by the Division of Infectious Diseases and Laboratories, Office of the Surgeon General, War Department, Washington, D. C. 256 pages. Philadelphia and New York: Lea & Febiger. 1918. Price \$1.50.

This book, although prepared for Army laboratories, should find a wide distribution among medical men engaged in civil practice. The contents deal with: collection and shipment of specimens and materials, solutions and stains, clinical pathological work, quantitative analytical methods, general bacteriological methods, special bacteriological methods, sanitary examination of milk, sanitary examination of water and sewage and detection of mercury in excretions.

The establishment of standard methods among civil hospitals throughout the country would no doubt be of as great advantage as it is in army work. In this small manual, standard laboratory technique only has been considered. E. V. K.